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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/674,068	04/06/2001	Takuma Hiramatsu	55340 (840)	9269

21874 7590 04/07/2004

EDWARDS & ANGELL, LLP
P.O. BOX 55874
BOSTON, MA 02205

EXAMINER	
NGUYEN, CHAU M	
ART UNIT	**PAPER NUMBER**
2633	13

DATE MAILED: 04/07/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary

Application No.	Applicant(s)	
09/674,068	HIRAMATSU, TAKUMA	
Examiner	**Art Unit**	
Chau M Nguyen	2633	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 December 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *26-32 and 37-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☒ Claim(s) *33-36* are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office action is in response to the Paper 11 filed on 04 January 2004.

Election/Restrictions

2. Applicant's election with traverse of Group I, directed to claims 27-31, in Paper No. 11 is acknowledged.

The traverse is on ground(s) that:

Claims 37-43 are characterized as part of the Group I, and depended on claims 27-30.

3. After re-consideration of the claim(s), claims 26-35 and 37-43 will be examined. Claim 36 is directed to a distinct invention which was not elected by applicant. Therefore, claim 36 will not be examined.

Drawings

4. Figures 7 and 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 26-28 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As claims 26-28 and 32 , the term "type" is a relative term which renders the claim indefinite. See MPEP 2173.05(b) E.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 26-28, 30-32, 37, 38, 40, 41 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welch et al. (Hereinafter "Welch") (Pat. No. 5,903,373) in view of Ota et al. (Hereinafter" Ota") (U.S. Pat. No. 5,986,790).

As claims 26 and 32, Welch discloses base station (fig. 8) (col. 11, lines 12-20) for use in a space-division multiplex optical wireless local area network for interconnecting a plurality of terminals , the base station comprising:

a light receiver (109, detailed in fig. 11) function of an angle-diversity type (col. 12, lines 20-22); and

a multi-beam transmitter (105, detailed in fig. 10) for outputting a plurality of beams,

wherein the multi-beam transmitter includes a plurality of optical transmitters (see fig. 14), and each of the plurality of optical transmitters includes at least one LD or at least one LED as a light source (col. 11, lines 60-65).

Welch fails to show optical transmitter as to form a plurality of space cells space cell each having a predetermined size. However, in view of Ota, figure 22B shows optical transmitter to form a plurality of space cell (detailed in fig. 23A) (Ota, col. 15, lines 61-62). Ota further discloses the transmitter (light source) is an array consisting of seven light sources (or LED). Therefore, it would have been obvious to one having ordinary skill in the infrared free-space communication art to use the transmitter configuration, which is formed by a plurality of LEDs and inherently including the predetermined size (seven of light sources), as taught by Ota into the communication system of Welch in order to increasing the transmitting power. One would have motivated for doing this since with a plurality of light source, the transmitting beam is realized in spatial diversity (col. 16, lines 12-16) and, as a results, enhance the receiving at the receiver end.

As claims 27 and 28, the system, as a combination of Welch and Ota, described above in that, Ota (fig. 24) shows the plurality of optical transmitters are set to specific direction and/or angle different from each other. (Ota, col. 16, lines 3-9).

As claims 30, 37, 38 Ota (fig. 22B) discloses the optical receiver including lenses system (175) dedicated to reception having a spatial resolution higher than a spatial resolution of the plurality of space cells each having a predetermined size (Ota, col. 15, lines 61-62 and col. 16, lines 9-16).

As claims 31, 40, 41 and 43, the system, as a combination of Welch and Ota, described above in that Welch and Ota do not clearly show a radius of a space cell is in range from 20cm to 100cm. However, it would have been an obvious matter of design choice, since the space cell is a transmitting device that LEDs are arranged or combined together, so, the number of LEDs have involved a mere change in the size of a space cell. A change in size is generally recognized as being within the level of ordinary skill in the art. *In re Rose, 105 USPQ 237 (CCPA 1955).*

9. Claims 33, 34 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Welch (Pat. No. 5,903,373) in view of Ota (U.S. Pat. No. 5,986,790), as applied in the claim 32, and in further view of Knapp (U.S. Pat. No. 4,975,926) and Sumi et al. (hereinafter "Sumi") (U.S. Pat. No. 4,536,057).

As claim 33, the combination network system of Welch and Ota, as described in section 8 above, fails to show receiver having an optical filter for selectively attenuating light transmitted from the transmitter of the terminal, and means for easily removing the optical filter.

However, Knapp discloses receiver having an optical filter (81, fig. 9) for selectively attenuating light transmitted from the transmitter of the terminal (Knapp, col. 5, lines 9-12). Knapp also fails to show a means for removing the optical filter.

But, Sumi shows mounting mechanism for attaching and detaching the filter (Sumi, Abstract and col. 4, lines 34-36).

Therefore, it would have been obvious to one having ordinary skill in wireless (optical) communication art to use an optical receiver associated with an optical filter as mentioned by Knapp, and employ with filter mounting mechanism as taught by Sumi in order to attenuate the light transmitted from the transmitter and improve the flexibility of the device in both assembly and adjustment process (Sumi, col. 2, 18-23 and Abstract). One would have motivated for doing this since the filter prevents the interference between the optical signal and the room light (Knapp, col. 5, lines 12-14).

As claims 34 and 35, Ota (fig. 25) shows the transmitter including plurality of light source (173a, 173b, ...) and a signal intensity multiplexer (206), that is used to select or detect a sufficient intensity from the spectrum components (Ota, col. 16, line 25-29).

Allowable Subject Matter

10. Claims 29, 39 and 42 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Hirohashi et al. (U.S. Pat. No. 5,532,858) is cited to show optical radio transmission and method for adjusting optical axes thereof.

Knapp (U.S. Pat. No. 4,975,926) is cited to show wireless indoor data communication system.

Avakian (U.S. Pat. No. 4,727,600) is cited to show infrared data communication system.

Kobayashi (U.S. Pat. No. 5,986,785) is cited to show electronic apparatus with optical communication capability.

Takamatsu (U.S. Pat. No. 5,822,099) is cited to show light communication system.

Heflinger (U.S. Pat. No. 5,726,786) is cited to show free-space star-coupled optical data bus.

Flaherty (U.S. Pat. No. 5,946,118) is cited to show communication collision detection.

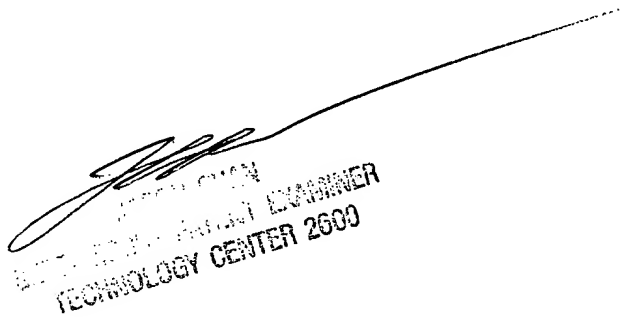
Jebens (U.S. Pat. No. 6,577,426 B1) is cited to show optical arrangement for full duplex free-space infrared transmission.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau M. Nguyen whose telephone number is 703-305-8965. The examiner can normally be reached on Mon-Fri from 8:00 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on 703-305-4726. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

C.M.N.
Mar. 24, 2004



Notice of References Cited

Application/Control No.	Applicant(s)/Patent Under Reexamination	
09/674,068	HIRAMATSU, TAKUMA	
Examiner	Art Unit	Page 1 of 1
Chau M Nguyen	2633	

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,986,790 A	11-1999	Ota et al.	398/1
	B	US-5,903,373 A	05-1999	Welch et al.	398/128
	C	US-5,532,858 A	07-1996	Hirohashi et al.	398/57
	D	US-6,577,426 B1	06-2003	Jebens, Robert W.	398/126
	E	US-5,946,118 A	08-1999	Flaherty, Paul A.	398/79
	F	US-5,822,099 A	10-1998	Takamatsu, Hiroyuki	398/162
	G	US-5,986,785 A	11-1999	Kobayashi, Fumiyuki	398/131
	H	US-5,726,786	03-1998	Heflinger, Donald G.	398/128
	I	US-4,975,926	12-1990	Knapp, Guenther	375/141
	J	US-4,727,600	02-1988	Avakian, Emik	398/126
	K	US-4,536,057	08-1985	Sumi et al.	359/892
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

COPY

FORM PTO-1449	DOCKET NO:	SERIAL NO.:
	55,340 (70840)	09/674,068
INFORMATION DISCLOSURE STATEMENT	APPLICANT(S): T. Hiramatsu	
	FILING DATE:	GROUP NO.:
	October 24, 2000	Unassigned

UNITED STATES PATENT DOCUMENTS

EXAM. INITIALS		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE IF APPROPRIA'

FOREIGN PATENT DOCUMENTS

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATIO YES/NO
Cam	BA	3-109837	05/09/1991	Japan			Abstract
Cam	BB	6-112903	04/22/1994	Japan			Abstract
Cam	BC	9-252143	09/22/1997	Japan			Abstract
Cam	BD	9-261176	10/03/1997	Japan			Abstract
Cam	BE	9-307502	11/28/1997	Japan			Abstract

OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

Cam	CA	T.S. Chu, et al.; "High Speed Infrared Local Wireless Communication"; IEEE Communications Magazine; 1987; Vol. 25; No. 8;pp. 4-10.
Cam	CB	J.M. Kahn, et al.; "Wireless Infrared Communications"; Proceedings of the IEEE; 1997; Vol. 85; N 2; pp. 265-298.
Cam	CC	D.R. Wisely; "A 1Gbit/s Optical Wireless Tracked Architecture for ATM Delivery"; IEE Colloquium On Optical Free Space Communication Links; London, UK; IEE; 1996; pp. 14/1-7.
Cam	CD	D.R. Wisely; et al.; "A 100Mbit/s Tracked Optical Wireless Telepoint"; Proceedings of 8th International Symposium on Personal, Indoor and Mobile Radion Communications (PIMRC '97, Helsinki, Finland; 1-4 Sept. 1997; New York, NY, USA; IEEE, 1997; pp. 964-8, Vol. 3.

EXAMINER:	DATE: 03/05/04

162296